

ATMOSPHERIC ELECTRICITY.

Thunder-storms.—1st, Fla., Ga., Neb. 2nd, Fla. 3rd, Fla., Ga., Mo., Ala., N. C., Tenn. 4th, Fla., N. C. 6th, Dak., N. J., Ohio, Pa. 7th, Ill., Iowa, Kan., Mo., Neb., Tex. 8th, Dak., Kan., Fla., Ga., Ill., La., Miss., Mo., Ala., Tenn. 9th, Fla., Ill., Ind., Iowa, Ohio, Tenn., Ky., S. C., Ga. 10th, Cal., Ind., Ky., Mo., N. C., Ohio, Tex., W. Va., Tenn., Pa., Me. 11th, Va., Del., Mass., N. C., Pa., S. C., Ga., N. Y. 12th, Conn., N. J., N. Y., Ind., Pa., Vt., Va. 13th, Dak., Ind. T., Kan., Ill., Ind., Iowa, Mo., Neb., Ohio, Va. 14th, Dak., Ark., Fla., Ga., Ill., Ind., Iowa, Mich., Miss., Mo., Ind. Ty., Ala., Tenn. 15th, Fla., Ill., Ind., Iowa, Ky., Mass., Mo., Neb., N. C., Tex., La., Ga., Ala., S. C., Tenn., Va. 16th, Dak., Ind. Ty., Kan., Fla., Ill., Iowa, Mo., Neb. 17th, Dak., Kan., Iowa, La., Mo., Neb., N. J., Ind. Ty., Ala. 18th, Ind., Ill., Iowa, La., Miss., Mo., Minn. 19th, Ill., Ind., Iowa, Kan., La., Mich., Mo., Ohio, Pa., Tex., Wis., Minn., Or., Tenn. 20th, Dak., N. Y., Del., Ga., Ill., Me., Md., N. J., Ohio, Pa., Cal., Neb., Tex., W. Va., Tenn., Va., Vt. 21st, Dak., Kan., Ill., Ind., Iowa, Me., Mass., Neb., N. H., N. J., N. Y., Cal., Minn., Wis., Tenn., Pa. 22nd, Ind. Ter., Mich., N. Y., Ohio, Ill., Ind., Iowa, Kan., La., Md., Mass., Miss., Mo. Ohio, Tex., Ala., Wis., Pa., W. Va., Ky. 23rd, N. Y., Tex., Ark., Fla., Ill., Ind., Iowa, La., Md., Mich. Miss., Mo., N. J., Ohio, Pa., Ala., Wis., Tenn. 24th, Fla., Ga., Ind., Md., Mich., N. J., N. Y., N. C., Ohio W. Va., Va., Pa., S. C., Tenn. 25th, R. I., Conn., Ind., Ky., Md., Miss., Mo., N. C., Ohio, Nev., Va. 26th, N. Y., Va., Del., Ga., Md., Mass., N. J., N. C., Pa. 27th, Col., Md., N. Y., Va., Mich., Ohio, Pa., Tex., Ala. Wis. 28th, Md., Del., N. J., N. Y., N. C., Ohio, Pa., Kan., Tex., Ala., Va. 29th, Dak., Mass., Minn. N. Y., R. I., Conn., Del., N. J., Pa., Md. 30th, Iowa, Kan., Mass., Mo., Neb.

Auroras.—Vevay, Ind., 2nd; Iowa City, Iowa, 5th; Monticello, Iowa, 26th; North Argyle, N. Y., 2nd Escanaba, Mich., 3rd; Morgantown, W. Va., 24th; Indianapolis, Ind., 28th; Burlington, Iowa, 19th; Wood's Holl, Mass., 18th; Bangor, Me., 19th; Starkey, N. Y., 14th, 30th; Wappinger's Falls, N. Y., 8th; Wytheville, Va., 27th, 29th, 30th.

Magnetic Phenomena.—Prof. G. Hinrichs, Iowa City, Iowa, reports the average diurnal magnetic range in declination as 8.2 minutes.

Telegraphic Communication interfered with by Atmospheric Electricity.—Visalia, Cal., 3rd, 2 p. m., wires surcharged with electricity. Pike's Peak, 10th, 13th and 22nd, intense electricity, could not transmit reports; 22nd, incessant crackle at lightning arrester; 27th, intense electricity. Concho, Tex., 19th, communication interrupted during thunder-storm; 28th, atmosphere greatly charged with electricity. Mason, Tex., 7th, storm interfered with communication. New London, 29th, air highly charged with electricity, interfering with telegraph wires.

OPTICAL PHENOMENA.

Solar Halos.—1st, Miss., Ohio, Ky. 2nd, Cal., Tex., Ala., Ky. 3rd, Ill., Ind., Mich., Ohio. 4th, Iowa, Mass., N. Y., Ohio, R. I. 5th, Del., Ga., Ill., Ind., Iowa, Mich., N. Y., Ohio, Ky. 6th, Iowa, Conn. 7th, Mich., Ohio. 8th, Pa., N. H. 9th, Miss., N. Y., Ohio, R. I., Conn., Mass. 11th, Ill., Ind., Mich., Pa., Ohio, Neb. 12th, Conn., N. Y., Ohio. 13th, Ill., Ind., Iowa, Ohio, Pa., W. Va., Ky. 14th, Mich., Pa., Vt., Cal., Ohio, Ga., Neb. 15th, Conn., N. J., N. Y., Ohio. 16th, Mich., N. H., Ohio, R. I., Mass., Conn., Tex. 17th, Ill., Ind., Mich., Ohio, Me. 18th, Mass., N. Y., Mich., Ohio, Ky., Vt. 19th, Ohio, Ga., Va., N. Y., Conn. 20th, Conn., Me., Mass., N. H., N. Y., Ohio, Vt., S. C. 21st, Mich., N. H., Ky. 22nd, Conn., Iowa, Me., Mass., Neb., N. H., N. Y., Ohio, Vt., S. C., R. I. 23rd, Me., N. Y., Ohio, Ga. 24th, Col. 25th, Mich., Conn. 26th, Ohio, La. 27th, N. Y., Kan., Tex., Vt. 28th, Neb. 29th, Mich., Utah, Cal., Fla., Conn. 30th, Ill., Iowa, Mich., and Conn.

Lunar Halos.—5th, Iowa. 7th, Mich., Utah, Va., Neb., S. C., Ga., Vt. 8th, N. Y., Mich., Md. 9th, Me., Va., Kan., Mo., W. Va., R. I. 10th, Ill., Mo., Wy. T., Neb., Iowa. 11th, Ill., Kan., Md., Mich., Ohio, Texas, Minn., Pa., Ky., S. C. 12th, Mass., Mich., Wis., Dak., Mo., Ohio, N. Y., R. I., Neb. 13th, Del., Me., Mich., Ohio, Va., Wis., Mo., W. Va., Ky. 14th, Mich., Va., N. Y., Ky., Fla. 15th, Ill., N. J., N. Y., Mo. Minn., S. C., Pa., N. H., Texas. 16th, Ind., Iowa, Mich., Ala. 17th, Ill., Mich., N. J., Ohio, Va., Me. 18th, S. C., Mass. 19th, Mass. 22nd, N. Y. 25th, Wis. 29th, S. C. 30th, S. C.

Mirage.—Olivet, Dak., 2nd, 3rd, 28th, 29th, 30th; Iowa City, Iowa, 22nd; New London, Conn., 15th; Starkey, N. Y., 21st.

MISCELLANEOUS PHENOMENA.

BOTANICAL.—Maine—in bloom, 26th, wild strawberry; leafing, 16th, raspberry, lilac, 18th, red maple, 24th, poplar. New Hampshire.—in bloom, 14th, trailing arbutus, 16th, elm; 30th, apple; leafing, 20th, red maple, lilac, goose-berry; 30th, maple, elm, birch; 30th, fruit forward. Vermont—in bloom, 4th, 11th, may flowers; 30th, plum, strawberry; budding, 28th, maple; 30th, grass four inches high. Massachusetts—in bloom, 1st, willow; 2nd, trailing arbutus; 5th, cinque foil; 6th, maple, hazel; 10th, lilac, elm; 13th, willow; 3rd, dandelion; 14th, alder, poplar, fever bush; 8th, violet; 11th, hyacinth; 18th, forsythia; 19th, mag-

nolia, larch; 17th, anemone, addertongue; 20th, cowslip; 23rd, cherry; 25th, plum; 22nd, horsechestnut; 28th, hawthorn; 21st, peach: ripe, 23th, rhubarb: leafing, 4th, gooseberry; 6th, currant: 24th, garden peas two inches high. Connecticut—in bloom, 8th, red maple, peach; 21st, shad bush; 24th, cherry; 27th, pear; 28th, apple; 17th, violet, jonquil: leafing, 10th, syringa; 27th, apple; 15th, rose; 22nd, horsechestnut, pear. New York—in bloom, 4th, daffodil; 12th, maple; 14th, dandelion, trailing arbutus; 18th, cherry; 21st, peach, plum; 30th, flowering almond, strawberry, blackalder; 29th, apple, pear; 18th, magnolia; 27th, lilac; 23rd, currant, shad-bush; 7th, violet, hyacinth; 15th, crocus, snow-drop; 17th, apricot: leafing, 1st, lilac; 30th, locust; 24th, forest-trees: 29th, rye heading, grain in fine condition; 24th, wheat unusually forward. New Jersey—in bloom, 11th, strawberry, pear, maple; 12th, cherry, peach; 14th, plum; 24th, lilac, apple, dogwood, grape: leafing, 25th, forest-trees. Maryland—in bloom, 27th, pea; 27th to 30th, wheat heading out. Pennsylvania—in bloom, 10th to 19th, peach; 14th, cherry, plum; 16th, grape; 19th, apple, pear: leafing, 20th, forest-trees: 20th to 24th, rye heading; 30th, wheat heading. West Virginia—in bloom, 5th, cherry, 10th apple, plum; 15th, wheat looks well. Virginia—in bloom, 3rd, dogwood, sassafras; 10th, poplar, maple, apple, pear, judas tree; 13th, cherry; 15th, lilac: 19th, fruit formed on all trees, except apple, in the eastern portion of State; in the northwestern portion, cherries formed on the 28th. North Carolina—ripe, 30th, strawberry. Florida—ripe, 23rd, strawberry, plum and dewberry; 1st, blackberry ripening, 15th plentiful. Mississippi—in bloom, 20th, snap dragon; 22nd, gladiola, morning glory; 27th, carolina pink, wild rose, larkspur, moss rose, portulacca; 27th, oats in full head. Arkansas—in bloom, 1st, white oak; 2nd, blackberry: ripe, 1st, maple seed; 11th, strawberry; 24th, cherry. Missouri—in bloom, 2nd, black-locust; 3rd, violet; 4th, crap-apple; 5th, cherry; 6th, apple; 7th, dandelion; 8th, strawberry; 11th, lilac; 16th, tulip; 18th, larkspur; 19th, snow-ball; 20th, honeysuckle, horse-radish; 27th, white walnut; 26th, yellow rose; 29th, pea; 22nd, blackberry; 26th, potato; ripe, 22nd, maple seed; leafing, 5th, maple; 17th, bluegrass heading; 20th, wheat in full head, prospects good. Indian Territory—in bloom, 17th, locust: ripe, 29th, strawberry. Ohio—in bloom, 1st, 11th, 13th, 15th, 17th, peach; 24th, apple, lilac; 4th, pear; 18th, cherry, plum, flowering almond, maple; 21st, redbud; 11th, magnolia, 27th, honey-suckle; 20th, dogwood; 25th, quince; 6th, currant, gooseberry: leafing, 20th to 28th, trees generally; 30th, barley heading; 17th, wheat and tobacco very forward. Indiana—in bloom, 1st, apricot, violet, hyacinth, crocus, narcissus, galanthus, anemone; 3rd, red bud jonquil, flowering almond, wild plum; 8th, cherry, pear; 10th, plum, peach; 15th, pear, cherry, tulip, iris; 17th, apple; 20th, dogwood; 22nd, rose; 23rd, wheat heading. Illinois—in bloom, 3rd, dandelion, pear; elm; 4th, buttercup; 5th, cherry, crab-apple, strawberry, blackberry; 7th, lilac; 15th, apple; 18th, plum; 21st, snow-ball; 22nd, roses, may apple, geranium; 24th, prairie candle-stick; 26th, actea; budding, 5th, grape vine; leafing, 21st, grape vine. Michigan—in bloom, 6th, daffodil; 29th, shad bush; 30th; peach, apple; leafing, 29th, forest trees. Iowa—in bloom 5th, dandelion; 6th, apple, pear, gooseberry, 7th, cherry, plum; 8th, peach; 20th, lilac, jessamine; 23rd, judas tree; 24th, strawberry, currant; 27th, hawthorn; 30th, pea: leafing, 11th, black walnut; 27th, crab apple; ripe, 30th, white maple seed. Wisconsin—in bloom, 19th, plum; 20th, bloodroot, violet, liverwort; 21st, dandelion, clover; 29th, strawberry; 30th, cherry, mountain ash, horsechestnut; 11th, blue iris; 22nd, apple: leafing, 29th, willow, balm of gilead; 30th, currant nearly full bloom. Kansas—in bloom, 5th, crabapple; 7th, apple; 3rd, plum; 4th, cherry, pear; 6th, flowering almond; 10th, rose; ripe, 8th, elm and maple seeds. Nebraska—in bloom, 8th, crabapple, plum; 11th, flowering almond, apple, cherry; 13th, strawberry; 2nd, wild flowers; 20th, wild cherry and plum; 9th trees leafing. Dakota—Olivet, 1st, grass commencing to look green; 15th sufficient growth for stock; prairies mostly green; 20th, cottonwood leafing. Nevada—in bloom, 2nd, peach; leafing, 29th, poplar, cottonwood. California—Visalia, 12th, barley and wheat heading.

BIRDS.—*Wild Geese*: Mount Sterling, Ill., 2d, 17th; Creswell, Kan., 6th, 10th, 11th, 12th; New Bedford, Mass., 7th; Springfield, Mass., 8th; Rowe, Mass., 9th; Contoocookville, N. H., 4th; Flushing, N. J., 25th; Green Castle, Pa., 22d; Woodstock, Vt., 6th; Newport, Vt., 10th; Embarrass, Wis., 19th; Bismarck, Dak., 11th, 25th; Dubuque, Iowa, 30th; Newport, R. I., 7th; Fort Griffin, Tex., 5th. *Martins*: Monticello, Iowa, 10th; Afton, Iowa, 8th; Cornish, Me., 15th; Fallston, Md., 9th; Plattsmouth, Neb., 10th; Oregon, Mo., 9th; Palermo, N. Y., 4th; Weldon, N. C., 12th, 23rd; Bellefontaine, Ohio, 6th; Jacksonburg, Ohio, 11th; Lewisburg, Ohio, 8th; Catawissa, Pa., 1st; Newport, Vt., 20th; Embarrass, Wis., 14th. *Swallows*: Southington, Conn., 25th to 29th; New Corydon, Ind., 18th; Guttenburg, Iowa, 13th; Cornish, Me., 15th; West Waterville, Me., 24th; Somerset, Mass., 2d; New Bedford, Mass., 3d; Litchfield, Mich., 20th; Waltham, Mass., 22d; Palermo, N. Y., 20th; Contoocookville, N. H., 14th; Pleasant Run, N. J., 22d; Wappinger's Falls, N. Y., 16th; Flushing, N. Y., 14th; Bellefontaine, Ohio, 19th; Sandusky, Ohio, 10th; Jacksonburg, Ohio, 11th, 15th; Bethel, Ohio, 23d; Catawissa, Pa., 10th; Chambersburg, Pa., 12th; West Charlotte, Vt., 17th; Woodstock, Vt., 30th; Strafford, Vt., 22d; Wytheville, Va., 15th; Prospect Hill, Va., 13th; Morgantown, W. Va., 13th; Atlantic City, N. J., 2d; Fort Union, N. M., 24th; Waterburg, N. Y., 26th. *Whippoorwills*: Laconia, Ind., 9th; Holton, Kan., 14th; Fort Madison, Iowa, 18th; St. Meinrad, Ind., 14th; Guttenburg, Iowa, 18th; Cresco, Iowa, 23d; Okalooska, La., 12th; Fallston, Md., 14th; Plattsmouth, Neb., 18th; Fayette, Miss., 1st; Oregon, Mo., 27th; Palermo, N. Y., 23d; Kensico, N. Y.,

20th; Weldon, N. C., 22nd; Murphy, N. C., 3rd; Ringgold, Ohio, 17th; near Keswick Station, Va., 10th; Dover Mines, Va., 10th. *Wrens*: Monticello, Ia., 10th; Plattsmouth, Neb., 18th; Oregon, Mo., 27th; Palermo, N. Y., 30th. *Cranes*: Monticello, Iowa, 20th; Creswell, Kan., 18th; Oregon, Mo., 16th; Dover Mines, Va., 10th; Fort Griffin, Tex., 4th; Camp Sheridan, Neb., 4th. *Cat-bird*: Tabor, Iowa, 23rd; Somerset, Mass., 20th; Plattsmouth, Neb., 18th; Murphy, N. C., 10th; Sandusky, Ohio, 30th; Jacksonburg, Ohio, 28th; Fayetteville, N. C., 1st; Bethel, Ohio, 22nd; Prospect Hill, Va., 23rd. *Mocking birds*: Baxter Springs, Kan., 15th; Fort Madison, Iowa, 18th; Brookhaven, Miss., 6th; Oregon, Mo., 6th. *Phebes*: Woodstock, Vt., 9th; *King birds*: Baxter Springs, Kan., 16th; Fayetteville, N. C., 1st; Prospect Hill, Va., 29th. *Cuckoos*: Brookhaven, Miss., 24th; Fayette, Miss., 16th. *Prairie chickens*: Fayette, Miss., 18th. *Thrush*: Southington, Conn., 21st; Baxter Springs, Kan., 14th; Somerset, Mass., 8th, 19th; Litchfield, Mich., 20th; Jacksonburg, Ohio, 16th; Woodstock, Vt., 25th. *Humming birds*: Laconia, Ind., 13th; Fayetteville, N. C., 14th. *Kingfishers*: West Charlotte, Vt., 17th. *Blackbirds*: Cornish, Me., 19th; Woodstock, Vt., 26th; Coalville, Utah, 27th. *Quail*: Brookhaven, Miss., 16th. *Bluejays*: Creswell, Kan., 29th. *Killdeer*: Starkey, N. Y., 2nd. *Snipe*: Creswell, Kan., 20th; Litchfield, Mich., 20th. *Pelicans*: Corning, Me., 15th, in large flocks. *Yellow Birds*: Palermo, N. Y., 23rd; Woodstock, Vt., 15th. *Meadow Larks*: Palermo, N. Y., 3rd; Embarrass, Wis., 1st. *Grouse*: Cornish, Me., 11th. *Ducks*: Nashville, Tenn., 19th. *Woodpeckers*: Cornish, Me., 2nd; Brookhaven, Miss., 4th; Woodstock, Vt., 25th. *Orioles*: Ft. Madison, Iowa, 28th; Cornish, Me., 15th; Litchfield, Mich., 30th; Plattsmouth, Neb., 22nd; Oregon, Mo., 27th. *Brants*: Ft. Madison, Iowa, 28th.

MISCELLANEOUS.—*Frogs piping*: Vevay, Ind., 2nd; Monticello, Iowa, 29th; Cornish, Me., 5th; Standish, Me., 3d; Fall River, Mass., 4th; Palermo, N. Y., 24th; Contoocookville, N. H., 3d; Woodstock Vt., 11th; Newport, Vt., 18th; Embarrass, Wis., 1st; Dubuque, Iowa, 11th; Camp Sheridan, Neb., 4th, *Colorado potato bug*: Laconia, Ind., 18th, numerous; New Market, Md., 29th, in large numbers; Litchfield, Mich., 30th, numerous; Vineland, N. J., 30th, in large numbers; Chambersburgh, Pa., 30th, very abundant; Olivet, Dak., 16th. *Fire-flies*: St. Meinrad, Ind., 16th; New Orleans, La., 6th. *Millers*: Creswell, Kan., 6th. *Bees*: Standish, Me., 10th; Oregon, Mo., 6th; West Charlotte, Vt., 19th; Embarrass, Wis., 29th; Waterburg, N. Y., 26th. *Bats*: Freehold, N. J., 20th; Catawissa, Pa., 22nd. *Butterflies*: Somerset, Mass., 7th; New Bedford, Mass., 14th; Catawissa, Pa., 23rd; West Charlotte, Vt., 29th. *Wasps*: Oregon, Mo., 7th. *Lady-bugs*: Oregon, Mo., 17th. *Crickets*: Oregon, Mo., 19th. *June-bugs*: Palermo, N. Y., 30th. *Mosquitos*: Olivet, Dak., 3rd, 11th. *Shad*: first caught on the 3rd at Wappinger's Falls, N. Y.; 4th, Ardenia, N. Y. Flushing, L. I., *fishing* better than for 30 years past.

Meteors.—Visalia, Cal., 30th; Judsonia, Ark., 11th; Southington, Conn., 18th; Woodstock, Md., 1st, 2nd, 5th, 25th and 26th; Milton, Mass., 29th; Fall River, Mass., 3rd; Litchfield, Mass., 20th; Oregon, Mo., 3rd; Waterburg, N. Y., 19th and 20th; North Volney, N. Y., 20th; Wappinger's Falls, N. Y., 3rd; Westerville, Ohio, 15th; Green Castle, Pa., 7th. Port Jervis, N. Y., 16th, 12:10 a. m., a large meteor of intense brilliancy passed from S. to N., altitude 45°, bursting when near northern horizon, with a report resembling heavy thunder heard after an interval of nearly two minutes; sky somewhat cloudy.

Polar Bands.—Baltimore, Md., 8th; New Corydon, Ind., 1st, 3rd, 4th, 7th; Guttenburg, Ia., 12th; Iowa City, Ia., 17th; Tabor, Ia., 17th; Gardiner, Me., 3rd; Plattsmouth, Neb., 20th; North Argyle, N. Y., 4th; Vineland, N. J., 22nd; Wytheville, Va., 1st, 17th.

Prairie and Forest Fires.—In Kansas every day, except 7th, 9th and 17th. Missouri, 1st, 4th, 5th, 19th, 23rd, 28th. Dakota, 2nd to 4th, 6th, 12th, 13th, 24th, 28th to 30th. Iowa, 4th. Nebraska, 5th, 24th, 26th. New Jersey, 21st. New York, 12th, 13th.

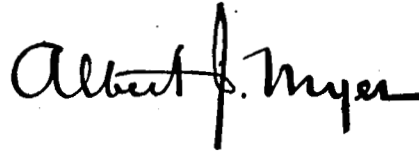
Zodiacal Light.—Southington, Conn., 3rd, 18th, 21st; Cresco, Iowa, 22nd, 27th; Monticello, Iowa, 5th, 6th, 18th, 19th, 20th, 23rd, 26th, 27th, 28th, 29th, 30th; Somerset, Mass., 3rd, 18th, 19th, 20th, 21st; Fall River, Mass., 21st; Rowe, Mass., 2nd; Cambridge, Mass., 3rd, 17th, 18th, 19th, 21st; Corning, Mo., 19th, 24th, 26th, 27th; Atco, N. J., 1st, 2nd, 21st, 26th, 30th; Tybee Island, Ga., 1st; Waterburg, N. Y., 2nd, 19th, 20th, 21st; Bellefontaine, Ohio, 4th; Wytheville, Va., 4th.

Earthquake.—On the 15th, at Glendive, Montana, on the Yellowstone, three distinct shocks were felt, following each other at intervals of half an hour. A rent in the ground was reported, five hundred yards long, revealing a coal vein, and emitting a strong odor of sulphur.

Sunspots.—The following observations, made by Mr. D. P. Todd, have been forwarded by Rear Admiral John Rodgers, U. S. Navy, superintendent of the U. S. Naval Observatory, Washington, D. C., viz:—none visible on the 1st, 6th, 7th, 8th, 11th, 12th, 13th, 14th, 17th, 18th, 19th, 21st, 22nd, 23rd, 25th, 26th, 29th and 30th; new, one group and one spot, the 2nd; large group of faculae visible the 5th and 27th.

Prof. G. Hinrichs, Iowa City, Ia., reports having examined the sun's disk on sixteen days, but without seeing any spots.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

A handwritten signature in cursive script, reading "Albert J. Myer". The signature is written in dark ink and is positioned above the printed title.

Brig. Gen. (Bvt. Assg^d.) Chief Signal Officer, U. S. A.

Copy furnished for